



HikeWest Incorporated

SUBMISSION

**PINJARRA ALUMINA REFINERY REVISED PROPOSAL
AND
BAUXITE MINING ON THE DARLING RANGE IN THE SOUTHWEST OF WA
FOR THE YEARS 2023 TO 2027
PUBLIC ENVIRONMENTAL REVIEW(S)**

August 2025

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ABBREVIATIONS USED

CAR	Comprehensive Adequate and Representative	EPA	Environmental Protection Authority	MMP	Mining Management Plan
CP	Conservation Park	ERD	Environmental Review Document	NJF	Northern Jarrah Forest
DBCA	Department of Biodiversity, Conservation & Attractions	ES	Executive Summary	PER	Public Environmental Review
DE	Development Envelope	EX	Expansion	POW	Prisoner of War
DWER	Department of Water and Environmental Regulation	MBT	Mountain Bike Trail	PP	Precautionary Principle
EDE	Exploration Development Envelope	MDE	Mine Development Envelope	RPZ	Reservoir Protection Zone

1. HOLISTIC IMPACT ASSESSMENT

Alcoa's holistic assessments for both the expansion proposal (EX) and the mining plan (MMP) are similar and inadequate (EX 16-1-6, MMP 738-43). They provide no new insights, conditions or mitigation measures, only repeating content from elsewhere in the documents. Only best-case outcomes for the NJF, from mitigation and offsets, are presented.

Factors and impacts that need to be considered more thoroughly on a holistic basis include:

1. Cumulative area impacted

- i) **Mine Development Envelope** – While most focus is placed on the net area of forest to be cleared, the gross area of the MDE is at least equally important due to the environmental impact of the extensive mature forest reduction and fragmentation. The total of the past 'referred' Huntly and Willowdale DEs plus Jarrahdale is around 548 sq km (ie MMP Table 1-2; plus Jarrahdale). The current mining plans and expansion proposals would increase that total by over 500 sq km to almost 1060 sq km. (See Figure 2; p.4.)
- ii) **Exploration Development Envelope** – The proposed extent of the EDE, 1780 sq km beyond the current envelopes (MMP Table 1-2), also signals that Alcoa hopes to eventually expand the MDE over much of that area. The cumulative MDEs (including Jarrahdale) would then total around 2840 sq km or 40% of the entire 7129 sq km Alcoa lease area. (See Figure 2; p.5.)

2. Impacts of forest fragmentation on biodiversity – *“Maintaining the total area of forest and minimising fragmentation arising from permanent clearing are key elements of biodiversity conservation strategies”* (Conservation and Parks Commission 2023, p.50).

Alcoa mentions fragmentation having impacts on jarrah forest ecosystems in its holistic impact assessment, but without elaborating on those impacts (EX 16-4). Fragmentation resulting from the expansions is only noted as not impacting conservation significant flora (EX 5-188).

Assuming mining development is allowed to eventually expand across the EDE, its ultimate legacy would be that the larger protected parks (Monadnocks CP and Helena NP) will be left as mostly isolated islands of quality mature forest, largely surrounded by degraded (rehabilitated) state forest land providing little interconnectivity to sustain the region's flora and fauna.

3. Intergenerational equity – The foreseeable negative impacts of the mining also compromise intergenerational equity, affecting the well-being and opportunities of future generations. The environmental legacy of the mining will be permanent. In parallel with the extensive irreversible changes to biodiversity, landscape and unique soil profiles which occur during the strip-mining, the limitations of rehabilitation result in further permanent loss of important recreational opportunities for both current and future generations within the Perth metropolitan area and beyond.

4. The Precautionary Principle – Application of the Precautionary Principle (PP) would predicate that the proposed expansions be rejected. Alcoa is yet to have any of its rehabilitation signed off as completed after 60 years of mining operations (Milne 2023). Despite this, the proponent maintains the environmental impacts of the proposals will be mitigated through rehabilitation and will protect the biodiversity and ecological integrity of the NJF accordingly (EX 2-36, MMP, 377).

Other independent published evidence (eg Campbell et al, 2024) now indicates great uncertainty on the long-term outcomes for the environment of the mining and rehabilitation.

The PP is already applied across the NJF to drinking water protection to prevent potential harm in the absence of complete scientific certainty about the risks. It is long overdue for it to now also be applied rigorously to bauxite mining proposals. The risks are wider-ranging and widely recognised (albeit not well quantified), and reasonably anticipated adverse consequences could be environmentally catastrophic and irreversible.

The need for Strategic Advice

The deficiencies of the Alcoa proposals highlight a need for the EPA to undertake Strategic Advice (under Section 16(e) of the Environmental Protection Act) for the entire NJF bioregion, to be in a position to advise the State Government on the long-term management of the region. The Advice should address the cumulative and potential environmental impacts including potential future mining activities that are already contemplated and/or might reasonably be anticipated to occur within the mining lease; and the potential health and social amenity impacts.

RECOMMENDATIONS

- 1. The Precautionary Principle should be rigorously applied in considering the proposals.**
- 2. The relevance of intergenerational equity should be considered.**
- 3. EPA should undertake Strategic Advice for the entire NJF region.**



Figure 1 - Bushwalker at Mount Solus, May 2021.

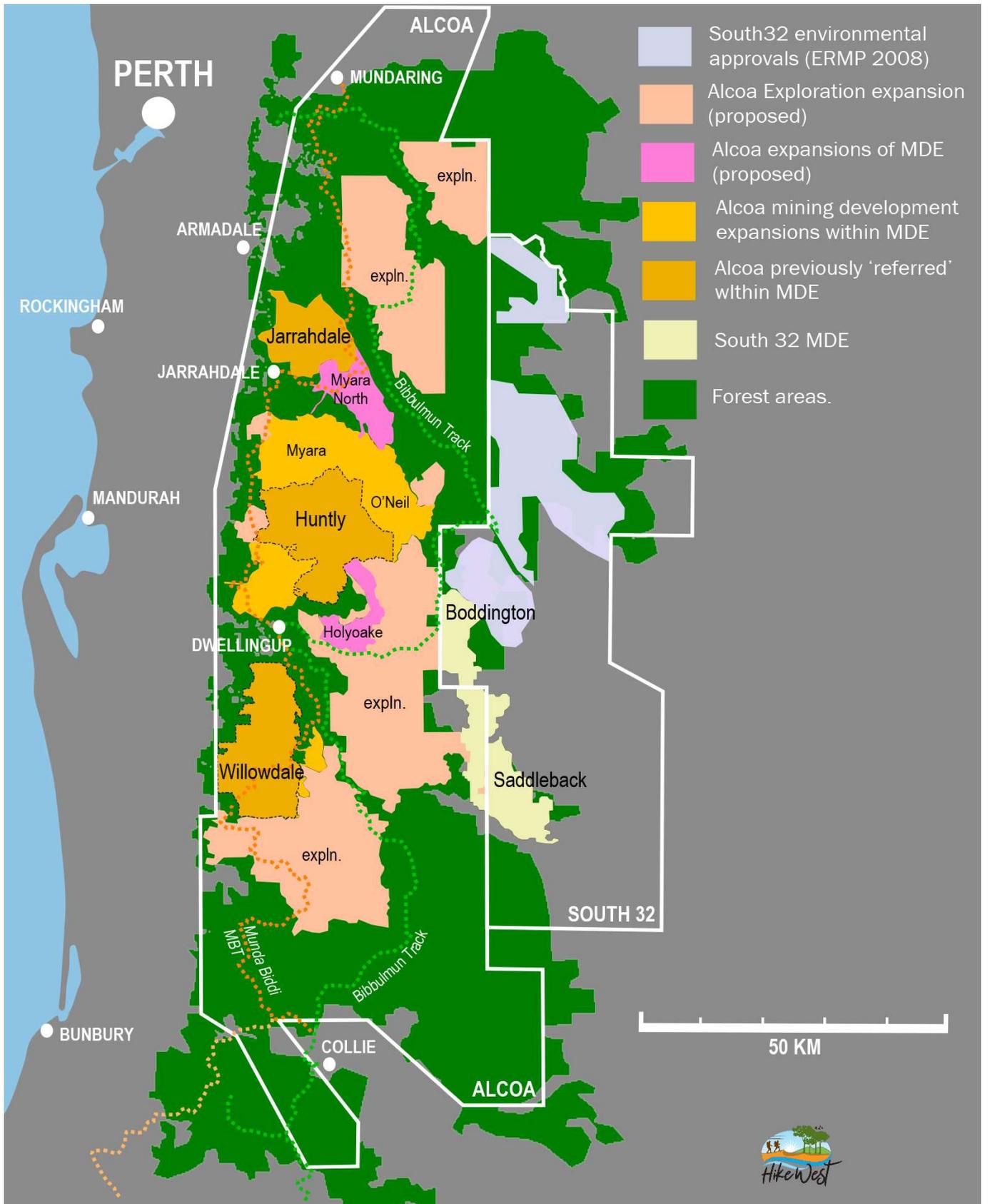


Figure 2 - Regional areal impact of existing and potential bauxite mining expansions across the NJF (Alcoa and South32 leases).

2. SOCIAL SURROUNDINGS

1. Cumulative impacts

- i) **Shrinking recreational opportunities** - Bushwalking opportunities in the NJF are being lost incrementally due to bauxite mining expansions. Concerns about the impact that such extensive mining on recreation activities could have were formally recognised as early as 1978, in a review for the EPA (The Technical Advisory Group, 1978). The report noted that *“the needs of recreationists are often ignored or not fully recognised”, and the area available for recreation appears to be shrinking at a time when the demand is continuing to increase”*.

Nearly five decades on, those concerns still remain largely unaddressed and would be exacerbated if the proposed expansions were to proceed. Much of the past focus has been on protecting just the Bibbulmun Track (and the Munda Biddi MBT) but the issue is much broader. Further expansions of mining and loss of social amenity would ignore the continuing growth in the need for quality, forested areas near Perth to meet the wider needs of recreationists; not only bushwalkers, but also trail runners, geocachers, orienteers and rogainers).

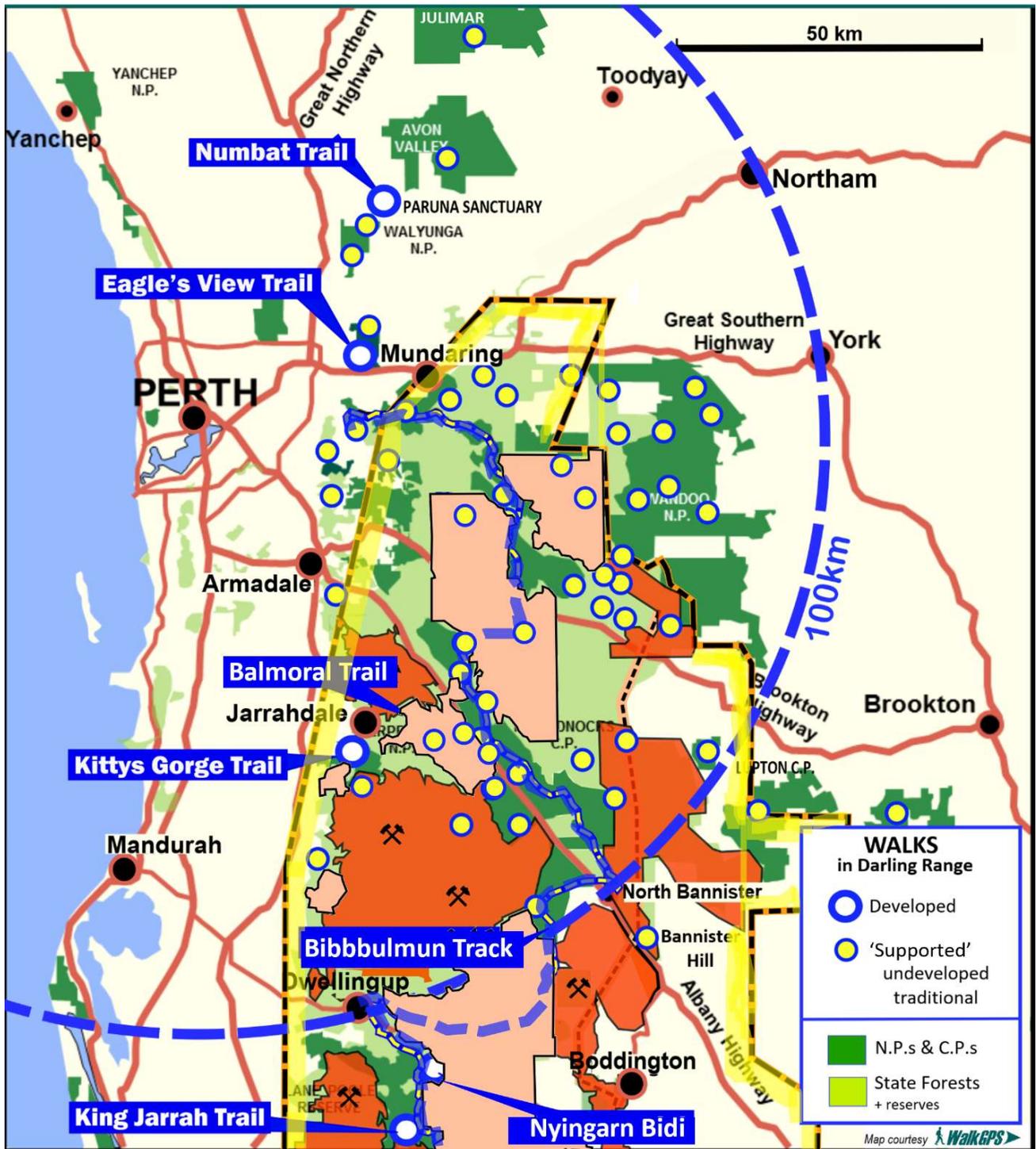
Eighty percent of WA’s population now lives in the Perth region and the population has grown by over 50% over the past 25 years. Continuing growth is further increasing demand for access to the NJF as a natural environment for recreation near the city. Nature-based outdoor activities such as bushwalking make a large contribution to keeping people active and so help avoid substantial healthcare costs in WA (Cheesman et al, 2018). Bushwalking ranks third out of more than 140 sport and non-sport activities in terms of adult participation. Over 400,000 adults - about 1 in 6 - participated in bushwalking in WA in 2024 (HikeWest, 2025a).

Bushwalkers and other forest recreationists most value high quality natural or near-natural environments for their activities. The altered post-rehabilitation environment is widely considered unacceptable for current and future bushwalking opportunities. Today and in the future walkers will avoid the rehabilitated minesite areas, even after decades of regrowth, as the severely altered condition of the landscape and vegetation is unsuitable for enjoyable bushwalking.

- ii) **Impacts of longer-term expansion**- The proposal to extend the Exploration DE beyond the existing and proposed expanded MDEs should be rejected. Such exploration presupposes that mining development will likely follow, so it should be supported with a comprehensive holistic impact assessment that takes into account the reasonably anticipated impacts of future mining.

Over the course of the next 40-or-so years at least thirty known bushwalking areas will be impacted if bauxite mining expansions continue (Figure 3 & Table 1, p.6-7); eventually extending northward within the proposed EDE to areas beyond Mount Dale and just 16-17km south of Mundaring village, and southward to just 22km north of Collie. More broadly – there will be a widespread loss of social amenity; with the loss of existing recreation opportunities and the loss of prospects for much-needed new hiking trails, together with future eco-tourism opportunities.

- iii) **Regional impacts on Bibbulmun Track** - Along substantial sections (an estimated 25-30% of the track through state forest areas between Kalamunda and Dwellingup), the Bibbulmun Track would likely be realigned and flanked by just a 200m buffer zone of mature forest on either side to screen out mining impacts; perhaps creating the illusion



Main bauxite mining leases
 Mining areas and/or environmentally approved
 Exploration development Envelope (proposed)

Figure 3 – Walk locations in NJF (between Mundaring and Dwellingup), and mining areas (previously approved) plus Exploration Development Envelope (proposed).

Walk Area Name	State Forest?	Impacted (now or future)	Company	Distance from Perth
Abyssinia Rock	Yes	Yes	Alcoa	55
Balmoral POW Camp – Three Mountains	Part	Yes (Myara North)*	Alcoa	75.5
Bannister Hill	Part	Yes	South32	100
Beraking Hill	Yes	Yes	Alcoa	82
Christmas Tree Well	Part	Yes (west & east)	Alcoa & South32	64
Eagle Hill (Gleneagle)	Part	Yes (S)	Alcoa	54
Ebenezer Valley	Yes	potentially	other	66
Flynn Hills	Part	potentially	other	87
Flynn Hills North	Part	potentially	other	74
Geddes Rock	Yes	Yes	Alcoa	95
Gibbs Rocks	Yes	Yes	South32	110
Gibraltar Rock (Mumballup State Forest)	Yes	potentially	Alcoa	219
Hancock Brook – Helena Brook	Yes	Yes	Alcoa	49
Hancock Brook – shorter option	Yes	Yes	Alcoa	56
Julimar	Yes	Other mining	Chalice	84
Karnet	Yes	Yes (already)*	Alcoa	78
Manns Gully – Chinamans Gully	Yes	Yes	Alcoa	35
Mount Billy area	Part	potentially (west)	Alcoa	80
Mount Dale North	Part	Yes (east only)	Alcoa	67
Mount Gorrie	Yes	Yes	Alcoa	56
Mount Randall – Eagle Hill	Part	Yes (west)	Alcoa	58
Mount Solus	Yes	Yes (already)*	Alcoa	74
Mount Vincent – North Mount Cooke	Yes	Yes (Myara North)*	Alcoa	75
Mount Yetar – longer version	Yes	potentially	other	80
Mount Yetar – shorter version	Yes	potentially	other	58
Ngangaguringguring Hill	Yes	Yes	Alcoa	62
Nockine Brook	Yes	Yes	Alcoa	89
North Dandalup	Part	Yes	Alcoa	73
Occidental Rock	Yes	Yes	Alcoa	50
Pickering Brook – Mt Gunjin	Part	Yes	Alcoa	25
Qualen Road	Yes	Yes (southwest)	South32	76
Running Brook	Yes	Yes	Alcoa	64
Turtle Pool – downstream	Part	Yes (west-most)	Alcoa	58
Upper Beraking	Yes	Yes	Alcoa	75
Upper Dale	Part	Yes (west)	South32	80
Upper Darkin – NW	Yes	Yes	Alcoa & South32	83
Upper Darkin – SE	Part	Yes (west)	Alcoa & South32	80
Willies Road	Yes	Yes	South32	80
Windsor Rocks North	Yes (CP)	Yes*	Alcoa	79
Wundabiniring	Yes	Yes	other	71

Total NJF walk areas potentially mining affected: 40

Alcoa lease	28
South32 lease	8
Other potentials	7

(*) Walk areas impacted by Huntly and Myara North MDEs.

Table 1 - Customary walk areas in State Forest areas of NJF likely to be impacted by bauxite (or other) mining.

of a walk in the forest, but forever destroying the attraction for bushwalkers seeking an authentic, immersive experience.

2. Impact of mining on bushwalking activities

- **Mining operations and bushwalking are mutually exclusive land uses** - During operations, blasting and dust emissions impact on the walking environment in adjacent accessible areas. Visual amenity is significantly reduced by vegetation clearing and earthworks. Pit floor ripping carried out during rehabilitation also results in a much more uneven surface. These are significant impacts on the bushwalking environment.
- **Post-operational conditions are not suitable for bushwalking** - While the land uses are no longer exclusive, the altered condition of the landscape is not suitable for bushwalking. Vegetation species diversity is reduced, forest structure is dense and simplified and there are remnant earthworks for surface water control. Deep ripping for revegetation results in irregular soil surface conditions and extensive spread of rubble and boulders.

3. Relevance of bushwalking / hiking trails and areas

Past and ongoing mining expansions, including those currently proposed, are of considerable concern to WA's hiking / bushwalking community. Continued bauxite mining expansions would affect not just the future viability of existing and potential new 'designated' tracks and trails sanctioned by DBCA, but - equally importantly - the customary cross-country / 'free-range' bushwalking activities which have been a longstanding, very popular, core recreational activity for traditional bushwalkers in the region; an activity which is recognised and 'Supported' by government agencies DWER and DBCA (see 4 i) below).

Many of the excellent customary bushwalking areas in the NJF lack designated trails. They offer numerous walking opportunities many of which are well documented (www.walkgps.com.au and Osborne, 2025). They mostly lack marked, designated trails but they do provide the variety and challenges that many bushwalkers seek.

4. Misconceptions

The proposal refers to "informal trails", including an assertion that "*there are many informal trails located within and around the Mine DE that are not promoted or managed by DBCA*" (EX 12-77) and also that "*Issues associated with informal trails and informal access, include damage to native vegetation and fauna, catchment and water quality risks and risks to users of getting lost or injured on poorly aligned or unmaintained trails.*" (EX 12-78). Addressing those misconceptions:

- i) **"Informal trails"** - More specifically there are few conventional bushwalking "trails" but many customary, flexible off-trail routes (most often without foot-pads in off-track sections). These are located within often-overlapping, known walk areas that bushwalkers have legitimately visited for many years. 'Free-range / off-trail bushwalking routes are not the same as unsanctioned trails.

'Free-range / off-trail bushwalking / trekking / hiking' (and also 'Orienteering / rogaining / geocaching / cross country running') are in fact 'Supported' by DWER and DBCA et al (as members of an Interagency Collaborative Working Group under Statewide Policy 13 DWER, 2019). They are recognised as legitimate, compatible recreational activities in the outer water catchment areas of the NJF; that means across all state forest areas of the mining lease excluding the RPZs (Table 2 in DWER, 2019; HikeWest, n.d.). The right of access to those areas of the multiple-use state forests (including the proposed mine expansion areas) would also be more aptly described as 'Supported' rather than "informal".

- ii) **“Damage to native vegetation and fauna”** - There is no evidence that bushwalkers pursuing free-range walking in the NJF have caused significant or lasting damage to native vegetation and fauna. The nature of the relatively open mature forest and the generally pebbly, lightly vegetated forest floor are well suited to minimum impact bushwalking. Animal trails (from kangaroos, emus, feral pigs and goats) also provide easy, non-damaging routes through local areas of denser vegetation. Misinformed terms sometimes used such as ‘bush bashing’ and ‘trampling’ of vegetation reflect an ignorance of the actual off-trail walking conditions in the NJF and the negligible observable impacts despite the long history of ‘free-range’ recreational bushwalking.
- iii) **“Risks to users”** - Reported cases of lost or injured hikers indicate most have been novice on-trail walkers who have either strayed off marked trails and/or have been ill-prepared. Most ‘free-range’ bushwalkers are either experienced and self-reliant, with good bush skills (including navigation) and/or are members of one of the several bushwalking clubs or other groups with capable walk leaders. They are much less prone to becoming lost or injured than on-trail walkers.
- iv) **Spread of dieback** - Alcoa also asserts (EX 12-78) that off-trail walkers risk introducing or spreading *Phytophthora* Dieback within the expansion areas. While there can be little doubt that many dieback infestations have been caused by past bauxite mining activities, including in the Jarrahdale-Wungong area, Alcoa precautions undoubtedly help limit the spread. Similarly, off-trail bushwalkers today are encouraged to carry a Personal Hygiene Kit (including a spray bottle with 75% meths: 25% water mixture; [refer DBCA](#)) to spray on boots etc, before entering Forest Disease Risk Areas. A much greater risk for spread of die-back, as elsewhere across the NJF, will be potential, difficult-to-control, off-road trail bike access to the area during the rehabilitation phase, facilitated by the mine haulage roads; That risk is not addressed in the proposals.

5. Specific impacts

- i) **Mount Solus and Karnet walk areas** - Alcoa states (EX12-80) that *“Alcoa is experienced in preventing and managing impacts to social surroundings in the Pinjarra locality and NJF.”* Yet without prior notice to bushwalkers, Alcoa’s expanding operations are currently destroying the quality of the long popular Mount Solus bushwalking area within the Huntly mine envelope (Figure 4, p.12). A walk route there has been publicly documented for many years (Osborne, n.d.(b)) and was known to Alcoa as an *“important elevated area for bushwalking”* (EX 12-12, Table 12-3). The Mount Solus walk area is now formally closed to public access and will remain closed until mine closure and relinquishment (EX 12-68). Bushwalkers will not wish to visit the degraded area post-rehabilitation. Similarly, a walk route in the Karnet area off Kingsbury Drive, near Serpentine Dam was once popular with bushwalkers, but has since been degraded due to mining of the Myara area.
- ii) **Myara North, Holyoake and O’Neil expansion areas**
 - The proposed expansions into these areas would result in loss of opportunities for existing and future quality bushwalking experiences in mature forest; including the lost opportunity for the development of new, quality trails in hiking areas near Jarrahdale and Dwellingup, along with the potential for nature-based tourism.
 - The Myara North expansion would greatly degrade the bushwalking amenity value of the corridor of mature forest between Jarrahdale and the scenic Monadnocks area east of Albany Highway (See Figure 4).

In particular:

- a) **Balmoral Walking Trail & Extension** – EX Tables 12.1 and 12.11 indicate a total of 14.1km (around 70%) of the total Balmoral Trail plus extension will be directly impacted and closed during mining. Rehabilitation will be visible from the trail once reopened. This long-established trail passes through the middle of the area providing an important link between Jarrahdale and the Bibbulmun Track (Figure 4).
- b) **Balmoral POW Camp-Three Mountains Walk route** – Alcoa has omitted this route from EX Tables 12.3 and 12.11. The route is publicly documented (Osborne, n.d.(a)) and is also recognised in the Mounts Loop Trail Master Plan (as part ‘Option B’ in Common Ground Trails, 2021). Around 60% (17km) of this total 29km, two-day route is within the proposed Myara North DE and would be affected by mining (Figure 4). The route is 93% on existing old forestry tracks, mainly using the Balmoral Trail, the Bibbulmun Track and old forestry roads. It is essentially a loop off the Bibbulmun Track, but starts and ends at the Balmoral POW Camp. It crosses Albany Highway to enable walkers to enjoy arguably the best, most scenic section of walking in the northern jarrah forest - within the Monadnocks Conservation Park - and also to spend a night camping at the popular Monadnocks Campsite on the Bibbulmun Track. The route follows the Balmoral Trail on the return from the Monadnocks. The only substantive, practical barrier to prevent this outstanding walk route being considered by DBCA and trails strategists for development as a potential future sanctioned trail was the assumption that the area was to be mined.

Though omitting the above walk route, Alcoa does identify the proposed **“Mounts Trail” (Jarrahdale – Monadnocks)**, a 30km alternative, but instead located “< 5km north of Myara North” (EX Tables 12.3 and 12.11). That route (‘Option A’ in Common Ground Trails, 2021) would initially share the new re-alignment of the Munda Biddi MBT, funded by Alcoa to avoid direct impacts from the proposed mining (EX Table 12.11). It would have minimal appeal for most bushwalkers, being in large part a shared trail (with mountain bikers) and an unattractive ‘there-and-back’ connection between the Bibbulmun Track and Jarrahdale, passing through the Jarrahdale mine rehabilitation area. The alternative Balmoral POW Camp-Three Mountains Walk route has much superior potential as a future ‘sanctioned’ trail, even if not prioritised by SSJ, DBCA and trail strategists, mainly due to its location within the proposed mine expansion envelope.

The Peel Regional Trails Strategy (Common Ground Trails, 2019, p.93) notes in relation to such a trail that *“Jarrahdale is ideally positioned to provide a gateway to the mounts.... Offering a unique experience traversing the highest points on the Darling Scarp, through open marri-jarrah forests with granite outcrops a trail in this area will add significantly to the trails offer and help to make Jarrahdale a regionally significant bushwalking destination”* and also that *“mining constraints impact significantly on this [trail] proposal”*.

- c) **Mt Vincent-North Mt Cooke and Windsor Rocks North walk routes** – The Myara North DE only borders parts of these two walk routes (Figure 4). Both walk routes will suffer from substantial visual and noise impacts during the mining.
- d) **Balmoral (/Italian) POW Camp** – Alcoa incorrectly suggests (EX 12-68) this heritage-listed Camp is a recreational facility of only *“local”* significance and that impacts on the Camp will affect only *“a local population who have a strong association with the site”*. While recognising its *“historic and social significance”*, Alcoa fails to state that

the Camp also has an equally important role as a more general parking hub and trail-head (with toilets) for non-local bushwalkers accessing the Balmoral Trail and the POW Camp-Three Mountains walk route. Alcoa states it will avoid direct impacts to the Camp by establishing mining avoidance zones (EX 11-42), but does not state the areas of the zones nor whether or not buffers will be included.

- e) **Bibbulmun Track** - Alcoa acknowledges that the proximity to the proposed mining expansions will directly impact the amenity of the Bibbulmun Track. Impacts to visual and audio amenity from construction, operational and blasting noise are expected, increasing with proximity to the source (MMP 617). A proposed 200m buffer (as required under the CAR Informal Reserve designation) will not protect the integrity of the Bibbulmun Track's forested areas from edge effects, nor protect the visual and auditory experience of walking in the forest.
- Mining disturbance will be visible from the Bibbulmun Track from Mount Cooke, Mount Vincent, Mount Wells and Boonerring Hill and from elevated viewpoints within the Monadnocks Conservation Park (EX Table 12-16) and noise from blasting may extend in a 1.2km radius (EX 12-48). Alcoa acknowledges the “*high*” visual impacts (Table 12-16) and that they “*may*” affect a few to several thousand visitors using the Track each year. They assert the visual impact will be “*substantially reduced*” by rehabilitation by “*about 2042-2043*” (EX 12-68) by which time they claim that “*rehabilitation will have restored the Jarrah forest to at least an immature stage that resembles un-mined forest*” (EX 12-63).
 - Visual impacts will also occur at other elevated viewpoints in the Monadnocks CP, including in the Eagle Hill, Mount Randall and Mount Cuthbert areas.
- f) **Munda Biddi MBT re-alignment** (EX 12-40, Table 12.11) - The already completed re-alignment of this trail to avoid Myara North (Figure 4), was funded by Alcoa and supported by a government agency (DBCA) and the Munda Biddi Trail Foundation. This could be considered to be a prejudicial action and not in the wider public interest, pre-empting the expansion approval process and encouraging an impression to the general public that the proposed mining expansion was to proceed and that it already had Government blessing.
- g) **Dwellingup Discovery Forest** - The proposed Holyoake expansion would impact on a 31 sq km area of forest which the Dwellingup community had originally intended would be protected as part of its Dwellingup Discovery Forest proposal (HikeWest, 2023). Alcoa admits the area includes “*Several potential ecological, water catchment, heritage, recreational and scientific values*” (Alcoa 2025, p.13), yet does not address them specifically, relying on broader assessments elsewhere in the ERD.

RECOMMENDATIONS

1. **The proposed Myara North expansion should be entirely excluded from mining to protect the strategically vital corridor of mature forest linking Jarrahdale and the scenic Monadnocks area.**
2. **The proposed O'Neil expansion should be excluded from mining to protect the amenity values of the Bibbulmun Track.**
3. **The proposed Holyoake expansion should be excluded from mining to protect the Murray Basin Wilderness Zone within the proposed Dwellingup Discovery Forest.**
4. **The expansion of the Exploration DE beyond the MDEs should be rejected pending a holistic impact assessment across the total lease area and NJF.**

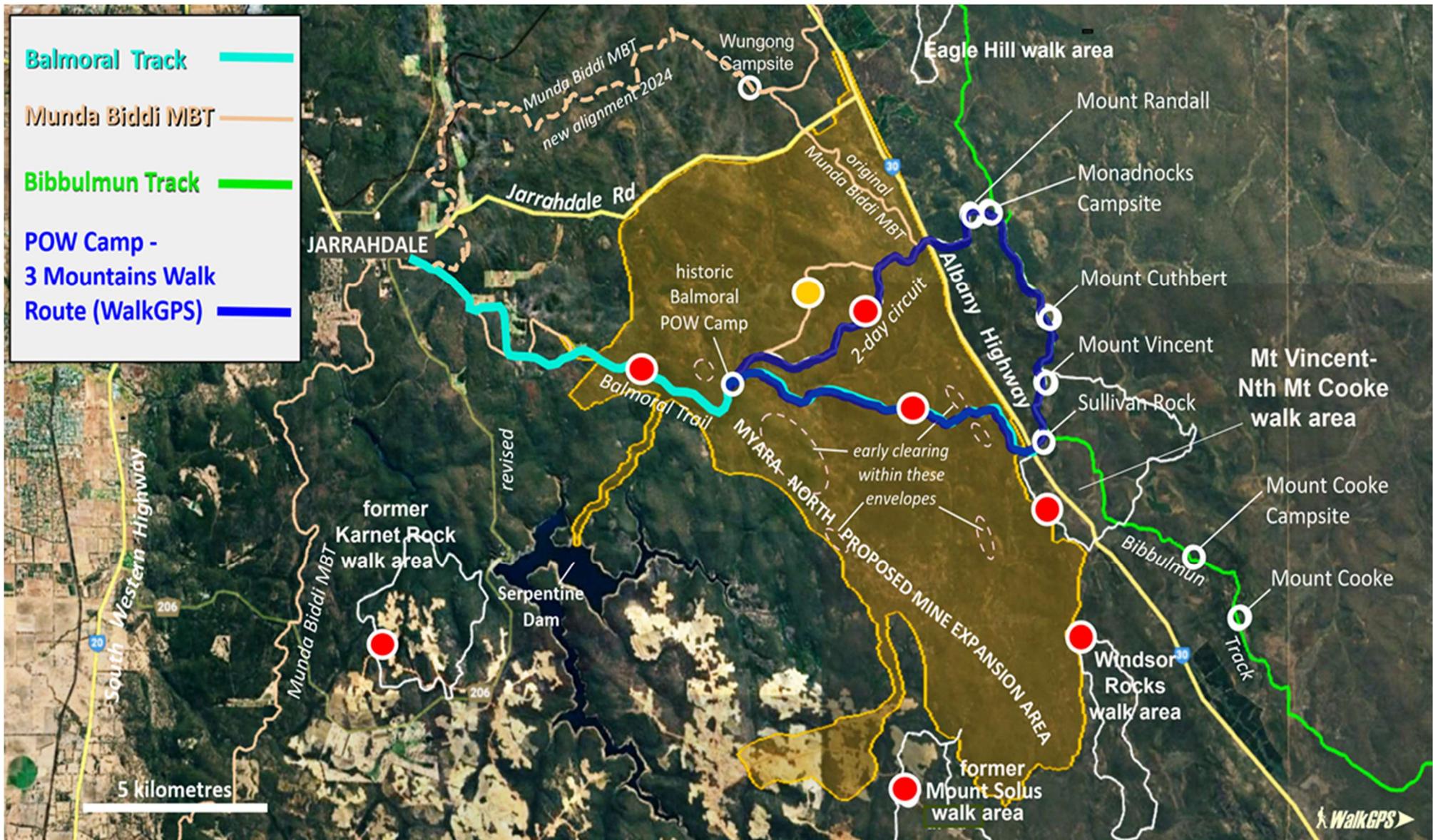


Figure 4 - Trails and walk routes impacted by bauxite mining (Myara North expansion area and adjacent). (Red dots indicate trails and routes affected directly or closely adjacent).

3. FLORA AND VEGETATION

1. **Alcoa position** – Alcoa expects ‘conservation significant’ flora species will not become threatened as their habitats are found elsewhere (EX 5-119). Alcoa also notes that no DBCA-mapped Old Growth Forest exists in the proposed expansion areas (EX 5-108), but it will conduct targeted surveys for unmapped old growth forest patches within proposed clearing areas. It will also minimise clearing of mature age forest and threatened flora species habitats (EX 5-167).
2. **High uncertainty on longer term viability and diversity of the replacement forest** - Despite Alcoa’s re-seeding and re-greening of the mined and ripped landscape with a diversity of local plant species, independent experts (eg Campbell et al, 2024) have expressed strong doubts that the young, fragmented replacement forest will ultimately survive, let alone thrive, on the drastically altered substrate. (See also 9. Rehabilitation).

RECOMMENDATION

Reliance on broad-scale representation of forest complexes elsewhere across the NJF should not be considered a sound justification for clearing within the proposed expansion areas, given the regional extent of mature forest losses from mining to date.

4. TERRESTRIAL FAUNA

1. **Residual impacts requiring offsets** - Alcoa notes that pre-2016 rehabilitation prescriptions have had a cumulative negative impact (EX 207, MMP 367). They anticipate more recent prescriptions will improve habitat quality for a number of species (Stantec 2003, 35). Despite Alcoa’s confidence in their evolving rehabilitation program, they also conclude mitigation measures will not counterbalance the likely significant residual impacts [of clearing, rehabilitation and forest fragmentation] on habitat for some threatened species, therefore environmental offsets will be required (Offsets EX 14-3). Alcoa’s offset area calculations fail to take account of impacts of forest fragmentation.
2. **Conservation values of fauna habitats** - Around 75% of vegetation cover in the proposed expansion areas is rated as providing ‘good’ to ‘excellent’ quality habitat (EX 6-25) while for the MMP, around 90% is rated ‘high’ or ‘medium’ quality with ‘high’ being relevant to 11 of 14 conservation significant fauna species (MMP335-37).
3. **Threatened fauna** - Risks to threatened fauna are understated. eg Cumulative long-term habitat loss due to the extensive bauxite mining to date poses a major, recognised risk to Black Cockatoo survival. Alcoa lists Baudin’s and Carnaby’s Cockatoos as “*Endangered*” and Forest Red-Tailed Cockatoos as “*Vulnerable.*” Internationally, the Baudin’s Black Cockatoo is recognised as Critically Endangered (IUCN, n.d.). The risk of extinction of Baudin’s Cockatoos will be heightened by the expected loss of up to 144,500 potential nesting trees for the Expansion areas alone (EX 6-151), with long-term consequences for “*the future local extent of breeding habitat*” for Black Cockatoos (EX 6-209). That is not adequately addressed by the proposals, including the potential offsets.

RECOMMENDATION

The high conservation values of the fauna habitats, the limitations of ‘offsets’, and the recognised threats to the survival of threatened fauna should be fully considered in assessing both proposals.

5. TERRESTRIAL ENVIRONMENTAL QUALITY

1. **Alcoa view** - Alcoa asserts that the “*loss of the bauxite friable fragmental layer has not been observed to result in impaired growth or health of rehabilitation*” (EX 7-27, MMP 422).
2. **An independent view** - Campbell et al 2024 have attributed failures in Alcoa’s rehabilitation to the removal of the lateritic substrate during mining. Alcoa denies this (EX 7-27, MMP 422) but does not attempt to restore the three Jarrah-Marri vegetation complexes that it clears (Koch 2007, 27).

RECOMMENDATION

The assessment should consider the evidence that stripping of the lateritic (bauxite) layer results in serious doubt that satisfactory rehabilitation can be achieved.

6. INLAND WATERS

1. Disturbance from the Expansion will mainly occur within drinking water catchments (EX 8-74) and over 88 sq km of the Exploration DE will occur within RPZs, to 1 km from the high water level (ref MMP 703-04; MMP 498). Within the Myara North expansion, mining activities in the RPZs have only been ‘deferred’ (with infrastructure exempted).
2. Water Corporation has indicated that “*Bauxite mining operations represent the single most significant risk to water quality in Perth Metropolitan and Southwest drinking water catchments*”. The “*probability of contamination of reservoirs*” is “*certain*” (Water Corporation 2022, p.7).
3. **Potential social surroundings impact** – The RPZs around the reservoirs offer some of the most scenic potential in the NJF. In at least one other state (South Australia), reserves surrounding drinking water reservoirs have been opened up for recreation (Water Source, 2024). Despite WA’s current drinking water protection policy prohibiting recreational activities in RPZs, it is conceivable that the RPZs could be opened up to some activities in the future. Mining within the RPZs to within 1km of the reservoirs compromises the value of that future potential amenity.

RECOMMENDATION

1. **No mining or exploration activities (except rehabilitation) should be permitted within the 2km wide RPZs, consistent with the Precautionary Principle.**
2. **Mining within the outer catchments should also be phased out and limited to the existing approved mine development envelopes.**

7. AIR QUALITY

No comment.

8. GREENHOUSE GAS EMISSIONS

No comment.

9. REHABILITATION PROGRAM

1. **Profound impacts** - The extent and condition of extensive areas of rehabilitated minesites will have profound impacts on future land-use, public amenity values and recreational opportunities within the proposed expansion areas.
2. **Alcoa's view** - Alcoa claims (eg EX 12-82) that its *“success in implementing and evolving its rehabilitation program provides confidence in its capacity to adapt as the objective for rehabilitation changes into the future”*. There is no disputing that *“Alcoa's rehabilitation practices after bauxite mining in the NJF, together with a substantial program of related research published in peer-reviewed journals, remain as sophisticated and comprehensive as for any mining operation globally”* (Stantec 2023, p.33).
3. **Independent views** - *“There are knowledge gaps relating to the severity, duration and scale of the potential impact that may remain as a result of the Proposal and whether these impacts can be realistically and credibly managed through rehabilitation”* (Stantec 2023, p.28).

Independent evidence indicates that rehabilitation strategies - regardless of how *“sophisticated and comprehensive”* (Stantec 2023, p.33) they may be - cannot successfully replicate or restore the original aged jarrah forest and landscape impacted by the stripping off during bauxite mining of the lateritic substrate on which the forest ecosystem evolved:

eg An independent non-governmental assessment of Alcoa's impact on the NJF over the past 60 years found that Alcoa's rehabilitation efforts were assessed to be *“substandard”* and on a *“poor to declining trajectory”* (Campbell et al, 2024). Despite progressive refinements to rehabilitation prescriptions, differences remain in species composition between rehabilitated and unmined forest (Stantec 2023). Moreover, certain species abundant before clearing are not taken into account in compositional targets in the completion criteria (Stantec 2023, p.13) eg *Banksia grandis*, *Allocasuarina fraseriana* and *Xanthorrhoea preissii* (EX 2-42).

Campbell et al used ecological 'attributes that measure progress against five-star outcomes', and gave Alcoa's rehabilitation only a two-star rating out of five. Their report found that rehabilitation does not:

- *“achieve a state similar to the native reference ecosystem*
- *improve over longer timeframes*
- *nor show sustained improved outcomes from adaptive management”*.

4. **Bushwalkers' views** - Results of a survey have shown that bushwalkers usually avoid mined areas in the NJF and that their perception of rehabilitated areas is largely shaped by the absence of large and old trees and natural landforms (Rosaa et al, 2019). It is impossible for adjustments to the completion criteria and rehabilitation programs to substitute for those irreplaceable ingredients of the social surroundings.
5. **Current status** - Alcoa advises that *“the Rehabilitation Completion Criteria are currently under revision with DBCA”* and the *“Rehabilitation Management Plan and Schedule will be updated as a result of this review”* etc and *“will...incorporateenhancements to rehabilitation activities”* (EX 5-176). Given that none of Alcoa's rehabilitation has yet been signed off as completed despite 60 years of mining operations (Milne, 2023) there is no basis for confidence that the evolving program will ultimately yield acceptable outcomes.
6. **Under-representation of the extent of impacts** – In the EX ES document (eg Fig. ES-4), disturbance footprints are not highlighted on the maps and secondary haul road locations within the DE are only circled schematically. This de-emphasises the full extent of environmental impacts and rehabilitation eg compared to EX Appendix B18 Fig. 6-1.

RECOMMENDATION

No new bauxite mining should be permitted while serious doubts persist about the environmental effectiveness and sustainability of the rehabilitation program.

10. STAKEHOLDER ENGAGEMENT

1. **The process** - Alcoa notes that *“Potential impacts on forest recreation and access have been raised”* and *“is continuing to work with relevant stakeholders to support current facilities and plans where possible”* (MMP Table 3-2).
2. **The outcome** - Details of the stakeholder engagements, considered together with the expansion proposals and their anticipated impacts, suggests that no amount of consultation, responses and mitigation compromises can achieve acceptable environmental outcomes from the proposed mining.
3. **HikeWest position** - HikeWest has a published position on *“Mining impacts on hiking in the Darling Range”* (see Attachment 1, and HikeWest, 2025b).

HikeWest informed Alcoa in 2020 that the impacts of past and ongoing mining expansions, including those currently proposed, were of considerable concern to WA’s hiking / bushwalking community, not just in relation to the future viability of existing ‘designated’ tracks and trails sanctioned by DBCA, but also with regard to the long-standing, customary cross-country / ‘free-range’ bushwalking activities that remain a legitimate, core recreational activity for traditional bushwalkers in the region. There is no meaningful basis for productive consultation while the company proposes mining expansions knowing that the existing and potential future bushwalking environment of the NJF is being severely compromised. The only acceptable outcome for bushwalking is that bauxite mining expansions cease.

4. **Exclusive engagements** - The premature re-alignment of the Munda Biddi MBT - funded by Alcoa and supported by DBCA and the Munda Biddi Trail Foundation - without wider public consultation (but with relevance also for the “Mounts Trail” as a partly shared trail proposal), suggests that stakeholder engagement has potential in some situations to compromise outcomes; pre-empting the opportunity for open consideration of issues of public interest as intended by the PER process.

RECOMMENDATION

Alcoa’s stakeholder consultation responses and related ‘mitigations’ should not be considered to reflect ‘social licence’ for the proposals as they do not address wider public concerns with environmental impacts of the mining.



Figure 5 - Bushwalker in jarrah forest at Mount Solus before the current mining.

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ATTACHMENT (separate pdf file)

HikeWest Position Paper: - Mining Impacts on Hiking in the Darling Range.